

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF ENTOMOLOGY
Washington, D. C.

PICKLE AND MELON WORMS

Two species of caterpillars or worms commonly attack the fruit of melons, cucumbers, and squashes. These are known as the pickle worm (Diaphania nitidalis) and the melon worm (Diaphania hyalinata). The pickle worm is usually more abundant and is responsible for most of the damage to melons grown in the south. Because of their manner of attack, these insects are very difficult to control, but partial relief may be obtained by timely applications of poisons and the employment of trap crops.

The pickle worm, when full grown is about $\frac{3}{5}$ of an inch in length and varies in color from white to light green, with conspicuous black spots along its body. The worm overwinters in the pupa or resting stage and emerges as a moth in the spring. The egg from which the worm develops is deposited by the moth on the parts of the plant that are used as food by the worms. These eggs hatch in from three to four days and the worms become fully developed in from two to three weeks, depending largely upon the weather conditions. In the early part of the season, shortly after hatching, the worms bore into the buds, blossoms, stems, and leaf stalks of the plant, but after the fruit forms they leave the foliage and enter the fruit. Timely applications of a poison to the foliage of the plant will kill some of the worms before they enter the fruit, but afterward they cannot be reached with a poison.

The melon worm feeds extensively on the leaves of the plants but also bores into the fruit. This worm differs in appearance from the pickle worm in that instead of black spots it has dark, longitudinal stripes down the body and is slightly larger. The eggs from which these worms hatch are deposited by the moth chiefly on the young leaves. Here the young worms feed to a large extent, and because of this habit they can be controlled by the use of a poison applied either as a dust or spray.

The practice of planting trap crops is one of the most effective method that has been developed for checking the damage caused by this insect. The worms apparently prefer the large blossoms of squash; therefore, the planting of from four to eight rows of early squash to one acre of cucumbers or melons to attract the moths, is recommended. It is well

to make several plantings of squash to provide a succession of blossoms and young fruits, the first planting to be made at the time the cucumbers or melons are planted and other plantings at intervals of about ten days. Hills or spaces should be left in the field for these later plantings. When the squash blossoms become infested with worms they should be picked and destroyed. Do not neglect the picking of these blossoms, as otherwise they will afford an excellent breeding place for the worms.

The melon worm and the pickle worm has been satisfactorily controlled in our tests by dusting with a mixture composed of 1 pound of calcium arsenate and 5 pounds of finely ground sulfur. Better coverage may be obtained by the substitution of 1 pound of wheat flour for a pound of the sulfur. The treatments should begin when the larvae first appear on the leaf buds of squash, which may be a week or ten days after the plants appear above ground. The treatments should be given at 10 day intervals until the first fruit appears. The rate of application will depend upon the size of the plants being dusted, and will range from 15 to 30 lbs. per acre, per application. Care should be exercised to see that the growing tips of the plant are well covered with the poison.

After the crop has started to produce fruit, a mixture composed of 1 part of pyrethrum and 3 parts by weight of finely ground dusting sulfur should be substituted for the arsenical mixture in order to prevent danger to the consumer from poisonous residues on the harvested crop. 20 to 25 pounds of this mixture should be used for each application per acre. Dusting sulfur is recommended here instead of tobacco dust, as sulfur alone has given partial control of the melon worm and pickle worm.

A bellows-type duster has proven more satisfactory for the treatment of the squash crop than the rotary type because of the method of planting and also the necessity of applying the material directly to the growing tips of the plant.

TRUCK CROP AND GARDEN
INSECT INVESTIGATIONS

May, 1933